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Frye Remains the Standard for Determining the Admissibility of Expert Testimony in Pennsylvania Courts: *Blum v. Merrell Dow Pharmaceuticals, Inc.*

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Frye Remains the Standard for Determining the Admissibility of Expert Testimony in Pennsylvania Courts: *Blum v. Merrell Dow Pharmaceuticals, Inc.*

EXPERT TESTIMONY — STANDARD FOR ADMITTING EXPERT TESTIMONY INTO EVIDENCE — The Pennsylvania Supreme Court held that expert testimony, in accordance with the *Frye* rule, must be generally accepted in the relevant scientific field to be considered as evidence, and that the federal practice of including expert testimony under more relaxed principals would not be followed in Pennsylvania courts.

Blum v. Merrell Dow Pharmaceuticals, Inc., 764 A.2d 1 (Pa. 2000)

On September 15, 1980, Jeffrey Blum was born with a crippling condition known as bilateral clubfoot defect.[1] During the course of her pregnancy with Jeffrey, Mrs. Blum took the drug Bendectin, manufactured and marketed by Merrell Dow, to help relieve the nausea associated with morning sickness.[2] The company maintained that Bendectin was a safe and effective means of controlling nausea during pregnancy and that the drug had no known adverse affects on either the mother or fetus.[3] The Blums however, disagreed and averred that Mrs. Blum's ingestion of Bendectin during pregnancy was the proximate cause of Jeffrey's injury.[4]

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1. Brief on Appeal of Plaintiffs-Appellants Blum at 3, Blum v. Merrell Dow Pharm., Inc., 705 A.2d 1314 (Pa. Super. Ct. 1997) (No. 3711 Philadelphia 1995). Clubfoot defect is a deformity of the foot (or feet) that occurs from a malformation of the bones of the forefoot during a fetal development. MOSBY'S MEDICAL, NURSING, AND ALLIED HEALTH DICTIONARY (Kenneth N. Anderson, et al. eds., 4th ed. 1994). Generally, the deformity manifests itself as a foot that is twisted inward and upward resembling a club, hence the name "clubfoot." *Id.* Treatment, depending on the severity of the condition, can range from splints and casts to numerous surgical procedures over an extended time. *Id.*

2. Blum v. Merrell Dow Pharm., Inc., 33 Phila. Co. Rptr. 193, 194 (1996). Mrs. Blum's attending physician prescribed the drug based on representation made in the Physician's Desk Reference, which indicated that human and animal studies showed no association between Bendectin and fetal anomalies. *Id.* at 237-38.

3. *Id.* at 194 (referring to a speech given by James Newberne, Vice-President for Drug Safety at Merrell Dow, to the Maternal Advisory Committee of the Food and Drug Administration regarding the safety and efficacy of Bendectin). *Id.*

4. Blum v. Merrell Dow Pharm., Inc., 626 A.2d 537, 538 (Pa. 1993) (*"Blum I"*). Proximate cause is defined as the primary cause producing injury, without which the injury

Mr. and Mrs. Blum sued Merrell Dow on behalf of their child and in their own right for the injuries allegedly caused by Bendectin.[5] In 1986, the trial resulted in a $2 million award for the plaintiffs.[6] However, the Supreme Court of Pennsylvania ultimately vacated the decision.[7] The case was retried in 1994 in the Court of Common Pleas of Philadelphia County and the jury returned a unanimous verdict in favor of the plaintiffs for over $24 million.[8]

Following the jury's decision, Merrell Dow sought a judgment notwithstanding the verdict ("j.n.o.v.")[9] on the grounds that the plaintiffs' expert testimony was scientifically inadequate and should not have been presented at trial.[10] The trial judge disagreed and denied the defendant's motion for j.n.o.v., from which the defendant appealed.[11]

The Pennsylvania Superior Court reversed, concluding that the plaintiffs' evidence did not satisfy the Commonwealth standard set forth in *Frye v. U.S.*,[12] requiring expert testimony to have the general acceptance of the relevant scientific community before being entered as testimony.[13]

The plaintiffs appealed to the Supreme Court of Pennsylvania, which noted that expert evidence was arguably admissible under the less stringent federal standard set forth in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*,[14] known as the *Daubert* test.[15] The

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would not have occurred. BLACK'S LAW DICTIONARY (6th ed. 1991).

5. Appellants' Brief at 3, *Blum* (No. 3711 Philadelphia 1995).

6. *Blum*, 33 Phila. at 195.

7. *Blum I*, 626 A.2d at 549. Merrell Dow argued that the verdict, delivered by an eleven-member jury after one juror became ill, was a violation of its constitutional right to a trial by jury. *Id.* at 538. The supreme court agreed and vacated the decision, remanding the case for a new trial. *Id.* at 549.

8. *Blum*, 33 Phila. at 196. The Blums were awarded $200,000 for medical expenses; $4,000,000 for pain, disfigurement, and emotional distress; $15,000,000 in punitive damages; and $4,918,147 in delay damages, resulting in a total award of $24,118,147. *Id.*

9. Judgment notwithstanding the verdict is a judgment rendered in favor of one party despite a verdict in favor of the other party. BLACK'S LAW DICTIONARY (6th ed. 1991).

10. Blum v. Merrell Dow Pharm., Inc., 705 A.2d 1314, 1315-16 (Pa. Super. Ct. 1997).

11. *Id.* at 1315-16. In addition to challenging plaintiffs' expert evidence with respect to causation, Merrell Dow raised five issues on appeal relating to jury instructions. *Id.* On appeal, the superior court, however, addressed only the sufficiency of causation evidence and reversed on this issue alone. *Id.* at 1325.

12. 293 F. 1013 (App. D.C. 1923). In *Frye*, the Court concluded that results from systolic blood pressure deception tests (lie detector tests) could not be admitted as expert evidence because the tests had not gained general acceptance in the relevant scientific community. *Id.* at 1014.

13. *Blum*, 705 A.2d at 1325. This standard is known as the *Frye* test. *Id.* at 1317.

14. 509 U.S. 579 (1993) (involving an allegation by plaintiffs that their children's birth defects resulted from the ingestion of Bendectin during pregnancy). *Daubert*, 509 U.S. at 582.

court agreed to review the case to decide whether the *Daubert* test should supercede the traditional *Frye* analysis used in Pennsylvania.[16] In a 5-2 decision, the court refused to reject the *Frye* analysis based on the facts in Blum, and ultimately affirmed the superior court's decision in favor of Merrell Dow.[17]

Writing for the majority, Chief Justice Flaherty stated that *Frye*, adopted in the Commonwealth in 1977,[18] excludes novel scientific evidence not having the general acceptance of the relevant scientific community.[19] In contrast, Flaherty noted that *Daubert* permits evidence not generally accepted within the scientific community, but only if a judicial inquiry shows the evidence to be both relevant and reliable — a standard the majority believed to be less stringent than *Frye*.[20] Despite outlining the differences in the tests, the court placed weight on the parties' willingness to frame their arguments in terms of the traditional test, and was therefore content to affirm *Frye* as the standard for admissibility of expert testimony.[21] In fact, the majority remarked that the details of the case actually precluded them from deciding whether *Daubert* should become the new standard in Pennsylvania.[22]

When reviewing the lower court decisions, the majority examined the credibility of plaintiffs' causation evidence, as presented by expert witness Dr. Alan Done.[23] The court concluded Dr. Done's

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The trial court granted summary judgment on the grounds that plaintiffs' evidence of causation did not have the general acceptance of the scientific community, and the Court of Appeals for the Ninth Circuit affirmed. *Id.* at 583-84. The Supreme Court reversed and remanded because federal judges must admit expert testimony showing scientific reliability and relevance to the issues at bar, regardless of general acceptance within the community. *Id.* at 597-98. On remand, the appellate court granted summary judgment for the defendant. Daubert v. Merrell Dow Pharm., Inc., 43 F.3d 1311, 1322 (Ca. 9th Cir. 1995).

15. Blum v. Merrell Dow Pharm., Inc., 764 A.2d 1, 3 (Pa. 2000) ("*Blum II*").

16. *Id.* at 2.

17. *Id.* at 4-5.

18. Pennsylvania officially adopted the *Frye* standard in *Commonwealth v. Topa*, 369 A.2d 1277 (Pa. 1977), which held that voiceprint analysis could not be used as evidence against a defendant because it lacked general acceptance within the field of acoustical science. *Id.* at 1282.

19. *Blum II*, 764 A.2d at 2-3.

20. *Id.* at 2-3. In a footnote, the Chief Justice cited an amicus brief of the Pennsylvania Defense Institute, charging that, although relatively simple, the *Frye* test results in greater consistency and predictability than does *Daubert*. *Id.* at 4, n.4.

21. *Id.* at 3-4.

22. *Id.* at 4. The majority considered the testimony insufficient to satisfy either standard. *Id.*

23. *Id.* at 4 n.5. While plaintiffs did offer evidence regarding the positive correlation between Bendectin ingestion and birth defects, Dr. Done was the only witness to testify as to a direct causal relationship between the drug and Jeffrey Blum's birth defect. *Blum I*, 705

proof was based on a methodology not usually accepted by the scientific community and, moreover, represented a backward approach to science.[24] The court questioned not only Dr. Done's methodology, but his conclusions and reputation as well, characterizing Dr. Done as a "professional plaintiff's witness."[25]

Chief Justice Flaherty pointed out that, in over thirty published reports relating to Bendectin, no study found any causal connection between Bendectin and birth defects.[26] Moreover, a review of the research by the Food and Drug Administration also failed to show the requisite causal connection.[27] The majority decided that the testimony of Dr. Done was insufficient to satisfy either standard, and therefore, no adequate grounds existed to evaluate the wisdom of a change from *Frye* to *Daubert*.[28]

Justice Cappy, the first of two dissenting justices, agreed that *Frye* should remain the standard of review.[29] However, he expressed concern over apparent misapplications of law in the superior court's opinion.[30] According to Justice Cappy, a critical issue not addressed by the majority was whether the superior court's classification of *Frye* as a two-pronged test would mislead lower courts.[31]

The superior court opinion stated that, in addition to methodology, an expert must also show that his conclusions satisfy the general acceptance standard of *Frye*.[32] Justice Cappy agreed that an expert's methodology must conform to the standard, but he disagreed with the proposition that expert conclusions had to be generally accepted; he feared that such an inflexible test would prevent properly conducted research from being heard, simply

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A.2d at 1316.

24. *Blum II*, 764 A.2d at 4 n.5.

25. *Id.* (referring to the characterization of Dr. Done in *Lust v. Merrell Dow Pharm., Inc.*, 89 F.3d 594, 597 (9th Cir., 1996)). The majority cited a number of examples from various federal courts criticizing Dr. Done and his professional competence and motivations. *Id.*

26. *Id.*

27. *Id.*

28. *Blum II*, 764 A.2d at 4.

29. *Id.* at 5 (Cappy, J., dissenting).

30. *Id.* (Cappy, J., dissenting).

31. *Id.* (Cappy, J., dissenting). Justice Cappy noted that Pennsylvania has historically required judges to evaluate the methodology behind a scientific principle to ensure that it meets the general acceptance test; however, according to Cappy, only one decision, *McKenzie v. Westinghouse Electric Corp.*, 674 A.2d 1167 (Pa. Commw. Ct. 1996), imposed the additional requirement of general acceptance of conclusions — an expansion of *Frye* that has never been formally accepted by the supreme court. *Id.* at 5 (Cappy, J., dissenting). *See infra* notes 32-34 and accompanying text.

32. *Blum I*, 705 A.2d at 1322-23.

because it was new.[33] For this reason, Justice Cappy stated that he would flatly overrule the superior court's decision requiring Dr. Done's conclusions to have general acceptance within the scientific community before admissibility under *Frye*.[34]

Justice Cappy also noted a fair amount of conflict in the record over exactly what standard the trial court had applied in deciding the case.[35] Given the confusion, Justice Cappy questioned how the superior court reached its conclusion without completing its own *Frye* analysis of the facts, and thereby overstepping the bounds of an abuse of discretion review.[36] Given his view that the trial judge is best positioned to serve as the "gatekeeper" of good science in the courtroom, Justice Cappy advocated remanding the case for a new trial.[37]

Justice Castille, also dissenting, agreed with the majority that *Frye* remains the standard in Pennsylvania.[38] However, he disagreed with the majority's conclusion that the trial judge incorrectly applied *Daubert*,[39] and remarked that the plaintiffs proved causation under *Frye* — namely because *Frye* only required a consensus with respect to expert methodology, not expert conclusions.[40]

Noting the different applications of *Frye* available to the court, Justice Castille criticized the majority for failing to state exactly

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33. *Blum II*, 764 A.2d at 5 (Cappy, J., dissenting). Justice Cappy commented that analyzing *Frye* questions only in terms of whether the methodology conformed to generally accepted scientific beliefs was sufficient to prevent questionable science from entering the courtroom while still allowing new, properly drawn conclusions to be presented to the jury. *Id.*

34. *Id.* (Cappy, J., dissenting).

35. *Id.* (Cappy, J., dissenting). Justice Cappy remarked that the trial court claimed to have properly applied *Frye*, the superior court declared that the trial court improperly applied *Frye*, and the Pennsylvania Supreme Court concluded *Daubert* was applied instead of *Frye* at the trial level. *Id.* at 5-6.

36. *Id.* at 6 (Cappy, J., dissenting). "Abuse of discretion" is the standard that an appellate court uses to determine whether a lower court made a clearly erroneous conclusion based on the facts of a case. BLACK'S LAW DICTIONARY (6th ed. 1991).

37. *Blum II*, 764 A.2d at 6 (Cappy, J., dissenting). Justice Cappy remarked that the "gatekeeper" role — keeping junk science out of the courtrooms through careful examination of the proffered expert testimony — was in the exclusive province of the trial judge and should not be left to appellate judges. *Id.* at 5-6.

38. *Id.* at 6 (Castille, J., dissenting).

39. *Id.* at 7 (Castille, J., dissenting). Justice Castille stated that the trial court was keenly aware that the application of *Frye* can be confusing; the trial court endeavored to explain its rationale while weighing facts that did fit neatly within the traditional application of *Frye* due to Merrell Dow's extensive presence in the Bendectin research community. *Id.* at 7. *See infra* note 52 and accompanying text.

40. *Id.* at 9 (Castille, J., dissenting).

what standard it employed when completing its analysis.[41] Following a traditional *Frye* analysis, requiring only a general consensus with respect to methodology,[42] Castille concluded that the record was sufficient to show that Dr. Done's testimony had the general acceptance of the scientific community.[43]

When examining the facts with respect to the plaintiffs' expert's methodology, Justice Castille commented that the methodology itself was not questioned by the superior court.[44] Rather, it was the expert's analysis of the data that the court found to be lacking.[45] Justice Castille rejected the superior court's approach on the ground that it precluded any conclusion other than that of the original researcher, and therefore was flawed.[46] He observed that both the plaintiff and defendant relied on the same basic data, but accounted for different factors in analyzing that data, thereby arriving at different conclusions.[47] The conflicting conclusions represented nothing more than a classic battle between the experts, which was appropriately resolved by a jury.[48]

In his opinion, Justice Castille also criticized the majority for relying on extraneous information to impeach the plaintiffs' expert.[49] He charged the majority with selectively citing unrelated cases in order to support the assertion that Dr. Done was a "profession plaintiffs' witness,"[50] when, in fact, similar criticisms

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41. *Id.* (Castille, J., dissenting).

42. *Blum II*, 764 A.2d at 9 (Castille, J., dissenting). Castille stated that he would flatly overrule previous decisions requiring expert evidence to be admitted as long as the methodology alone met the standard of general acceptance. *Id.*

43. *Id.* (Castille, J., dissenting).

44. *Id.* at 14 (Castille, J., dissenting). The methodologies used involved: analysis of the drug's chemical structure to determine if the molecular makeup of the drug made it "suspect;" *in vitro* studies analyzing the effect of Bendectin on animal cells; *in vivo* studies analyzing the effect of Bendectin on live animals; and recalculation of human epidemiological studies. *Blum I*, 705 A.2d at 1320.

45. *Blum II*, 764 A.2. at 15 (Castille, J., dissenting). The superior court remarked that Dr. Done's "recalculation" of the evidence was outside the general acceptance of the community because he failed to control for biases through standardization of the data. *Blum I*, 705 A.2d at 1324.

46. *Blum II*, 764 A.2d at 16 (Castille, J., dissenting). Castille pointed out that a variety of studies relied upon by the defendant did not contain standardized data. *Id.* at 15-16. Moreover, the defense experts also employed the same type of recalculation methodology as Dr. Done and admitted that such analysis could produce reliable scientific data. *Id.* at 16.

47. *Id.* (Castille, J., dissenting).

48. *Id.* at 16 (Castille, J., dissenting).

49. *Id.*

50. *Id.* at 10 (Castille, J., dissenting). In a footnote, Justice Castille argued that many of the cases cited by the majority to support their conclusion regarding Dr. Done's reliability were insufficient to support this line of reasoning. *Id.* at 11 n.7. In fact, only one case cited by the court actually expressed concern over Dr. Done's impartiality. *Id.*

could be made about the defendant's witnesses.[51] Justice Castille remarked that the majority's reliance on unrelated cases, instead of the record, was inappropriate and resulted in an inaccurate opinion, especially given Merrell Dow's apparently influential presence within the Bendectin community.[52]

Justice Castille questioned the defendant's influence over the science involved.[53] He suggested that it indicated that a potential bias within the research community existed to give the defendant the ability to create a scientific orthodoxy that precluded any minority opinions from ever entering the court.[54] With this in mind, Justice Castille remarked that, even if *Frye* ultimately required the trial court to analyze both methodology and conclusions for general acceptance, the *Blum* case was unique and should give rise to an exception allowing minority testimony where it is shown that the research community in question is potentially biased towards one party.[55]

For centuries, courts have struggled with the challenge of defining what constitutes acceptable scientific evidence in the courtroom.[56] Until the early part of the twentieth century, courts generally permitted an expert to testify at trial, provided that he had appropriate credentials and the evidence presented would likely help the jury.[57] In 1923, however, the United States Court of Appeals for the District of Columbia Circuit recognized the need for a new standard governing admissibility and addressed the issue

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51. *Blum II*, 764 A.2d at 10-11 (Castille, J., dissenting).

52. *Id.* at 11 (Castille, J., dissenting). Castille noted that a large part of the Bendectin research, which was purported to be objective, revealed a potential proprietary link between the researchers and the defendant. *Id.* Merrell Dow employed Dr. Brent, the defendant's lead witness and an influential researcher in the Bendectin community, for eighteen years. *Id.* Dr. Brent was also an editor for the peer review journal which published studies relating to the Bendectin/birth defect relationship, and was noted to have submitted articles to Merrell Dow attorneys for their approval prior to allowing a piece to be published. *Id.* In addition, the record showed that Merrell Dow manipulated data, underreported evidence of malformations, relied on flawed research when reporting to the FDA, hid research from the FDA, paid for research studies directly from the defense budget, and employed experts who actively solicited funds in exchange for research. *Id.* at 12-14.

53. *Id.* at 14 (Castille, J., dissenting). *See supra* note 52 and accompanying text.

54. *Id.* (Castille, J., dissenting).

55. *Id.* at 16-17 (Castille, J., dissenting). Castille noted that, "[t]here is something not a little offensive about an entity creating a biased, litigation-driven scientific 'orthodoxy,' and then being permitted to silence any qualified expert holding a dissenting view on ground of 'unorthodoxy.'" *Id.* at 17.

56. David L. Faigman et. al., *Check Your Crystal Ball at the Courthouse Door, Please: Exploring the Past, Understanding the Present, and Worrying about the Future of Scientific Evidence*, 15 CARDOZO L. REV. 1799, 1800 (1994).

57. *Id.*

in *Frye v. United States*.[58]

In *Frye*, a defendant convicted of murder attempted to prove his innocence by introducing evidence based on a systolic blood pressure deception test.[59] The lower court refused to admit the evidence and, on appeal, the court of appeals endeavored to define the correct standard for gauging the admissibility of expert testimony.[60] Justice Van Orsdel, writing for the majority, noted that, to be admissible, the evidence proffered must have general acceptance in the relevant scientific community.[61] Given that blood pressure testing to show deception was novel and not accepted by the community, the court found the evidence to be inadmissible, and precluded the defendant from relying on it.[62]

The standard set forth in *Frye* has been widely accepted and used throughout the United States.[63] Prior to the *Frye* decision, Pennsylvania generally admitted expert testimony as long as the witness could show that he was an expert in the area, and the testimony was needed to clarify issues not within the general knowledge of the jury.[64] However, around the 1950's, Pennsylvania began showing a trend towards the adoption of *Frye*.[65]

The Pennsylvania Supreme Court moved closer to the *Frye* standard in *Commonwealth ex rel. Riccio v. Dilworth*, in which Nicholas Riccio was convicted of robbery.[66] The defendant asked the court to order a polygraph test to help prove his innocence, but

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58. *Frye*, 293 F. at 1013.

59. *Id.* at 1013-14. The systolic blood pressure deception test was an early form of polygraph testing. Deborah Maliver, M.D., Note, *Out of the Fryeing Pan and Into Daubert: Trial Judges at the Gate Will Not Spell Relief for Plaintiffs*, 56 U. PITT. L. REV. 245, 247 (1994). The defendant-appellant was convicted of second-degree murder and tried to introduce favorable results from a lie detector test. *Frye*, 293 F. at 1013-14. On appeal, the court of appeals noted that the test operated on the premise that lying, combined with fear of detection during examination, produces a rise in blood pressure above that attributable to simple anxiety brought on by the examination process itself. *Id.*

60. *Frye*, 293 F. at 1013-14.

61. *Id.* at 1014. Specifically, the court said that, "the thing from which the deduction is made must be sufficiently established to have gained general acceptance in the particular field in which it belongs." *Id.*

62. *Id.*

63. Leonidas Pandeladis, Comment, *Frye and Daubert: Does Pennsylvania Need a Different Evidentiary Standard for Scientific Evidence?*, 36 DUQ. L. REV. 597, 599 (1998).

64. Cooper v. Metro. Life Ins. Co., 186 A. 125, 128 (Pa. 1936).

65. James E. Starrs, Conference Proceeding, *The Duquesne University School of Law Institute for Judicial Education's and the Supreme Court of Pennsylvania's Conference on Science and the Law: Recent Development in Federal and State Rules Pertaining to Medical and Scientific Expert Testimony*, 34 DUQ. L. REV. 813, 815 (1996).

66. 115 A.2d 865, 866 (Pa. 1955).

the request was denied, and he appealed.[67] The crux of the defendant's argument was that lie detectors had advanced to the point of general acceptance and should be admissible;[68] however, the majority disagreed and affirmed the trial court's decision to deny the request.[69] Citing *Frye*, the supreme court indicated that the reliability of such tests was not sufficiently established to warrant inclusion as evidence, but nonetheless stopped short of adopting the general acceptance test set forth in *Frye*.[70]

Not until the landmark decision of *Commonwealth v. Topa*, in 1977, did the Pennsylvania Supreme Court squarely address the issue of adopting *Frye* as the standard for admissibility in the Commonwealth.[71] In *Topa*, the Commonwealth relied on evidence generated by spectograms to convict the defendant of murder.[72] On appeal, one question the supreme court confronted was whether the trial court erred by allowing the Commonwealth to present expert testimony on spectography.[73] In his analysis, Justice Jones acknowledged the credentials and opinion of the Commonwealth's witness, but confirmed that other scientists in the field had not

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67. *Riccio*, 115 A.2d at 866. The court noted that the defendant staunchly maintained his innocence and asked for a lie detector test to provide some generalized evidence as to the truth of his statements. *Id.* Justice Ross, however, did not believe that the test had evolved to the point where it could provide more than speculative evidence as to a defendant's guilt or innocence, despite the defendant's assertions to the contrary. *Id.* at 866-67.

68. *Id.* The court commented that the question of the reliability of lie detector tests was not squarely before the court because the defendant was not attempting to admit evidence based on such tests. *Ricchio*, 115 A.2d at 866. The question, rather, was whether the trial court erred when it refused to order the test that could present some generalized evidence as to the defendant's innocence. *Id.*

69. *Id.* at 867.

70. *Id.* at 866-67.

71. 369 A.2d 1277 (Pa. 1977). The defendant in *Topa* was convicted of first-degree murder. *Topa*, 369 A.2d at 1278. The case against the defendant consisted of circumstantial evidence including: testimony from witnesses identifying the victim's clothing and the defendant's clothing; the defendant was seen driving past the crime seen on the day the body was found; blood on the defendant's jacket matched the victim's blood; and a missing button from defendant's jacket was found at the scene. *Id.* at 1279.

72. *Id.* at 1279-80. A spectrogram is an instrument for analysis of voiceprints (which the court likened to fingerprints) as a means of identifying speech patterns to determine if an individual placed a particular call. *Id.* at 1280.

73. *Id.* at 1278. The Commonwealth's witness regarding spectography was a police officer in charge of a Voiceprint Identification Unit operated by the Michigan State Police. *Id.* at 1279. The officer had extensive training in voiceprint analysis, was in charge of the Unit for six years prior to the case, and firmly believed in the reliability of spectography. *Id.* at 1280.

found the technology as reliable as did the testifying officer.[74] The court then remarked that, to be admissible, the evidence must be founded on more than just opinion.[75] Rather, *Frye* should be strictly applied and evidence must be generally accepted in the scientific community for admissibility.[76] Accepting this new standard, the court remarked that the Commonwealth's evidence could not stand, and reversed the defendant's conviction, remanding for a new trial.[77]

Decisions after *Topa* illustrate the Commonwealth's continuing dedication to the *Frye* standard of general acceptance.[78] For example, in *Commonwealth v. Nazarovitch*, a witness, after being hypnotized, claimed to recall details about a murder.[79] The trial court refused to allow the testimony, and on appeal, the Pennsylvania Supreme Court resolved whether hypnotically refreshed testimony was sufficiently reliable so as to have the general acceptance of the scientific community.[80] Justice O'Brien noted that, after the Commonwealth adopted *Frye* in 1977, expert testimony had to meet the requisite standard of having the general acceptance of the relevant scientific community prior to being admitted as evidence.[81] Given that many researchers speculated about the reliability of memories evoked through hypnosis,[82] the

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74. *Id.* at 1280. The court pointed out a number of criticisms of voiceprint analysis, including comments that the test is more susceptible to extraneous factors and allegations that mimicry and intentionally altering one's voice could cause false results. *Id.* at 1280-81.

75. *Id.* at 1281.

76. *Topa*, 369 A.2d. at 1282.

77. *Id.*

78. *See* Commonwealth v. Apollo, 603 A.2d 1023, 1024 n.3, 1028 (Pa. Super. Ct. 1992) (holding that results of a Horizontal Gaze Nystagmus test, which tested sobriety by eye movements, were inadmissible under the *Frye* standard). *See also* Checchio v. Frankford Hosp., 35 Pa. D. & C. 4th 143, 161-62 (1998) (holding that *Frye* required an expert witness to produce objective evidence that reduced oxygen to the minor plaintiff's brain while hospitalized was the proximate cause of the child's neurological dysfunction).

79. 436 A.2d 170, 173 (Pa. 1981). The witness in *Nazarovitch* claimed to have nightmares about the murder of a 12-year-old girl and thought she might know something about the crime. *Nazarovitch*, 436 A.2d at 171. Police had interviewed the witness previously, but she had not provided any useful information about the crime. *Id.* Following her visit to the police station, officers arranged for the witness to see a hypnotist, which ultimately led the witness to recall details of the murder sufficient to indict three individuals for the crime. *Id.* at 172.

80. *Id.* at 171, 173.

81. *Id.* at 172-73.

82. *Id.* at 174. The court pointed to several problems with hypnotically refreshed testimony, including the witness's desire to satisfy the hypnotist, susceptibility to suggestive influences, and the possibility that the witness will simply "fill in the gaps" with fantasy. *Id.* at 174.

majority determined that the hypnosis evidence was insufficient to satisfy the general acceptance rule and precluded admission of the witness' testimony.[83]

Despite the apparent simplicity of *Frye*,[84] the Pennsylvania courts recently addressed various issues with respect to its application of *Frye*, as is manifest in *Dambacher v. Mallis*.[85] In *Dambacher*, the plaintiff was injured when the driver of the car she was riding in lost control, allegedly as a result of radial and non-radial tires being used on the same car.[86] The trial court permitted the plaintiff to produce an expert to testify as to the adverse consequences of mixing the two types of tires, and on appeal, the Superior Court answered the question of the requisite showing that an individual must make in order to be qualified as an expert for purposes of *Frye*.[87] The superior court noted that, to be qualified as an expert, the witness must show a degree of experience and education encompassing the specialized issue at trial.[88] The plaintiff's expert, although an expert mechanic, lacked expertise in tire design, study, or manufacture, and was therefore incapable of providing expert testimony regarding a causal connection between the tires and the accident.[89]

In addition to clarifying the definition of "expert," Pennsylvania has also decided what constitutes "general acceptance" within the Commonwealth, as explained in *Commonwealth v. Middleton*.[90] In *Middleton*, the defendant was convicted of robbery and murder.[91] During the trial, the Commonwealth relied on scientific testimony that linked the dried blood found at the scene to the defendant; however, the defendant contended that the Commonwealth failed to show general acceptance under *Frye* because only one witness was called to testify as to the reliability of the blood test.[92]

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83. *Id.* at 178.

84. Brief of Amicus Curiae The Pennsylvania Defense Institute in Support of Appellee, at 23. *Blum v. Merrell Dow Pharm., Inc.*, 705 A.2d 1314 (Pa. Super. Ct. 1997) (No. 3711 Philadelphia 1995), (referring to the "undeniable simplicity" of Frye). *Id.*

85. 485 A.2d 408 (Pa. Super. Ct. 1984).

86. *Dambacher*, 485 A.2d at 411.

87. *Id.* at 411.

88. *Id.* at 418.

89. *Id.* at 420.

90. 550 A.2d 561 (Pa. Super. Ct. 1988).

91. *Middleton*, 550 A.2d at 562. The defendant tried to rob the victim, but when she resisted, he dragged her into an alley and beat her severely, which ultimately resulted in her death. *Id.*

92. *Id.* at 565. The prosecution's witness was a serologist who testified as to the reliability of electrophoresis, a type of blood testing used to identify blood samples. *Id.* at

On appeal, the superior court addressed whether a single witness presented by the Commonwealth to testify as to the reliability of a certain type of blood testing was sufficient to show general acceptance.[93] The court declared that the *Frye* standard is met provided that the expert's testimony is not merely based upon subjective opinion alone, but instead reflects the general acceptance in the scientific community, as evidenced by published scientific studies.[94] Because both judicial and scientific authorities recognized the reliability of the test, the fact that only one witness testified as to the test's reliability did not undercut its possible general acceptance in the scientific community.[95]

Pennsylvania further refined *Frye's* application in *Commonwealth v. Dunkle*,[96] confronting whether expert opinions regarding the behaviors of abused children should be admissible testimony when such behaviors were readily understood without the assistance of an expert.[97] Writing for the supreme court, Justice Cappy explained that in order to be admissible, expert testimony must not only have general acceptance in the particular field in which it belongs, but must also involve subject matter "beyond the knowledge or experience of the average layperson."[98] Because many of the behaviors attributed to abused children could easily be understood by jurors, the court stated that an expert witness was unnecessary and held that the testimony could not be admitted as evidence.[99]

Recently, in *Miller v. Brass Rail Tavern*, the supreme court again revisited the issue of who may testify as an expert for purposes of a *Frye* inquiry.[100] The question in *Miller* was whether a

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565. The witness testified that, based on published scientific studies and on his own experience, electrophoresis is generally accepted as reliable technology among experts in forensic serology. *Id.*

93. *Id.*

94. *Id.* at 565-66.

95. *Id.* at 566.

96. 602 A.2d 830 (Pa. 1992).

97. *Dunkle*, 602 A.2d at 831, 838. The case also concerned the general admissibility of evidence of "Child Abuse Syndrome," which reflects an attempt to profile behaviors of sexually abused children and to use such profiles as a diagnostic tool. *Id.* at 832. The court refused to allow such general testimony on the grounds that the "syndrome" was not generally recognized among the doctors treating the children, and lacked specificity in identifying sexually abused children as opposed to other types of abused children. *Id.*

98. *Id.* at 836.

99. *Id.* at 839.

100. 664 A.2d 525 (Pa. 1995). The plaintiff in *Miller* claimed that the defendant bar owner's act of serving alcohol to an intoxicated patron and then permitting him to drive was the proximate cause of the patron's death in a subsequent vehicular accident. *Miller*, 664 A.2d at 526-27.

non-physician coroner with 27 years experience was qualified to render expert testimony regarding the time of death.[101] Justice Montemurro, writing for the majority, remarked that the test to determine a witness' qualifications is "whether the witness has any reasonable pretension to specialized knowledge on the subject under investigation."[102] Despite that the coroner did not have a medical degree, the court stated that his experience as a licensed mortician and county coroner were sufficient to constitute specialized knowledge for the purposes of expert testimony, and permitted the testimony.[103]

In addition to the above clarifications of the rule, the Pennsylvania Supreme Court has also struggled with ascertaining whether an expert's conclusions or methodology need general acceptance in the scientific community.[104] In *Commonwealth v. Crews*,[105] the defendant was convicted of the brutal murder of two hikers along the Appalachian Trail.[106] The defendant raped one of the victims, and the prosecution attempted to introduce evidence supporting a match between the body fluids found in the victim and those of defendant.[107] At trial, an expert for the Commonwealth testified that the defendant's DNA[108] patterns generally matched the DNA patterns obtained from the raped victim, but he did offer any statistical analysis to refute the possibility that the match was simply a coincidence.[109] The defendant countered by attempting to introduce evidence as to the statistical analysis of DNA sampling,

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101. The court precluded the plaintiff's expert witness from testifying as to the time of death because the coroner was not identified as an expert in pre-trial interrogatories and was not a medically trained doctor. *Id.* at 527. Because the plaintiff was unable to establish a time of death, the court ruled that no causal connection was established, in favor of the defendant. *Id.*

102. *Id.* at 528.

103. *Id.* at 529.

104. *See* Emmanuel O. Iheukwumere & Craig L. Thorpe, *Admissibility of Scientific Evidence Under Pennsylvania Law: An Excursion Through the Frye Test*, 71 Pa. Bar Assn. Quarterly 103 (2000).

105. 640 A.2d 395 (Pa. 1994). The victims were killed at an overnight shelter on the Appalachian Trail. *Crews*, 640 A.2d at 396. One victim had been tied, raped, and stabbed in the neck, which resulted in her death after approximately fifteen minutes. *Id.* at 397. The other victim was shot three times with a revolver, and died five to eight minutes after the wounds were inflicted. *Id.*

106. *Id.* at 396-97.

107. *Id.* at 397. *See supra* note 105.

108. Deoxyribonucleic acid (DNA) is the molecule that carries human genetic information. MOSBY'S MEDICAL, NURSING, AND ALLIED HEALTH DICTIONARY (Kenneth N. Anderson, et al. eds., 4th ed. 1994).

109. *Crews*, 640 A.2d at 397.

but the lower court refused to allow the evidence.[110]

The Supreme Court of Pennsylvania was called upon to determine the admissibility of evidence based on DNA analysis.[111] The court, acknowledging *Frye* as the applicable rule, accepted the proposition that the broad concept of DNA testing is generally accepted in the field of human genetics,[112] but declined to admit any evidence based on statistical analysis of DNA data because the process of drawing conclusions from the DNA analyzed evidence had not achieved widespread acceptance within the scientific community.[113] Therefore, the majority refused to overturn the convictions and affirmed the lower court decision.[114]

Similarly, in *McKenzie v. Westinghouse*, the Commonwealth Court encountered the issue of expert testimony's admissibility under *Frye* if the methodology employed by the expert has achieved general acceptance, but the conclusions reached have not.[115] The court stated that, to be admissible, the scientific conclusions propounded must reflect more than a single expert's opinion or the opinions of a small number of the scientific community in question.[116] It was not enough that the methodologies employed are generally accepted.[117] Rather, the conclusions reached by the expert are required to be generally accepted in the relevant scientific community.[118] Because a general consensus did not exist with respect to the witness's conclusions, the court refused to

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110. *Id.* at 399. The prosecution was permitted to testify that DNA analysis of the samples taken from the victim were "extremely strongly associated with the DNA from the defendant." *Id.* at 402. The defendant sought (and was denied) admission of statistical evidence to contradict this testimony and show that the match could have been a product of coincidence. *Id.* at 401-02. Ultimately, the jury found the defendant guilty of first-degree murder. *Id.* at 397.

111. *Id.* at 396. The circumstantial evidence presented included: possessions belonging to the victims found in the defendant's possession; the handgun the defendant possessed was identified as the weapon that killed one victim; a knife found on the defendant had the second victim's blood on it; and a variety of witnesses placed the defendant at the scene at the time of the murders. *Id.* at 397.

112. *Id.* at 401.

113. *Id.* at 402. The court viewed the problem to be that statistical analysis was subject to too many variables, including race, ethnicity, population samples, etc. *Id.* at 401.

114. *Crews*, 640 A.2d at 407.

115. 674 A.2d 1167 (Pa. 1996). In *McKenzie*, plaintiffs alleged that the defendant's use of the chemical trichloroethylene (TCE) ultimately contaminated groundwater, resulting in a fatal heart defect in their infant daughter. *McKenzie*, 674 A.2d at 1168. The trial court excluded the plaintiffs' expert testimony on the grounds that the relevant scientific community did not commonly accept the opinion that TCE causes heart defects. *Id.* at 1170.

116. *Id.* at 1171 (citing *Middleton*, 550 A.2d at 561).

117. *Id.* at 1172.

118. *Id.* (citing *Topa*, 369 A.2d at 1277).

allow the testimony.[119]

On the heels of *Crews* and *McKenzie*, the Pennsylvania Supreme Court decided *Commonwealth v. Blasioli*.[120] The defendant in *Blasioli* was accused of rape, and the prosecution introduced statistical evidence to show a one in ten billion chance that the DNA in question came from anyone other than the defendant.[121] The court once again resolved whether testimony regarding DNA statistical testing could be admitted as evidence.[122] Justice Saylor, writing for the majority, acknowledged that both an expert's theory and the technique employed must meet the general acceptance standard of *Frye*.[123] However, despite the lack of consensus regarding statistical testing in previous years, developments in the relevant field had yielded the consistent opinion that the statistical method employed in *Blasioli* had gained general acceptance.[124] Therefore, statistical analysis of DNA could properly be admitted as evidence under Pennsylvania's application of *Frye*.[125]

Despite Pennsylvania's adherence to *Frye*, some of the state's courts have criticized the doctrine as ineffective at keeping junk science out of the courtroom.[126] Moreover, various commentators have even questioned whether *Frye* provides a workable standard to gauge the admissibility of evidence.[127] Criticisms of *Frye* include the lack of consistency in defining which witnesses qualify as expert and what is needed to show general acceptance;[128] inaccurate suppression or admittance of testimony;[129] and difficulty in defining what scientific discipline is implicated.[130]

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119. *Id.* at 1172-73.

120. 713 A.2d 1117 (Pa. 1998).

121. *Blasioli*, 713 A.2d at 1118. Blasioli was convicted and sentenced to four to eight years imprisonment for the rape and six to twelve months on remaining charges. *Id.* at 1119. The Superior Court affirmed. *Id.*

122. *Id.*

123. *Id.* at 1119.

124. *Id.* at 1125. The court noted subsequent events that indicated that the debate over the science had resolved and was in fact supported by respected scientific literature, and was recognized by the weight of judicial authority. *Id.* at 1125-26.

125. *Blasioli*, 713 A.2d at 1127.

126. *See* Quaker City Hide Co. v. Atlantic Richfield Co., 10 Phila. 1 (1985) (referring to *Frye* as a standard with burdens far outweighing any benefits available). *Id.* at 11.

127. *See generally* Pandeladis, *supra* note 63, at 615 (advocating the use of a more liberal approach to the admissibility of evidence within the Commonwealth Courts).

128. Edward V. DiLello, Note, *Fighting Fire With Firefighters: A Proposal For Expert Judges at the Trial Level*, 93 Colum. L. Rev. 473, 475-76 (1993).

129. Scientific Evidence Symposium, *Admissibility of Scientific Evidence — An Alternative to the Frye Rule*, 25 Wm. & Mary L. Rev. 545, 552-53 (1984).

130. Daniel E. Fisher, *Daubert v. Merrell Dow Pharmaceuticals: The Supreme Court*

Proponents of the standard, however, claim that *Frye* is the best method to assure that only good science is heard in the courtroom, minimizing the risk that a jury will be swayed by pseudo-science.[131] In addition, advocates of *Frye* also laud the test as the most consistent and objective approach to defining expert testimony.[132] Regardless, much controversy exists over whether *Frye* provides a workable standard for judging the reliability of scientific evidence.[133]

Because of these questions surrounding the relative value of *Frye*, courts around the country, including those in the federal system, have abandoned it in favor of the test set forth in *Daubert v. Merrell Dow Pharmaceuticals*.[134] In *Daubert*, the United States Supreme Court decided whether Frye bound the federal courts.[135] The Court concluded that Federal Rule of Evidence 702 governs the admissibility of expert testimony, and is interpreted to allow expert testimony provided it is both reliable and relevant to the issue at bar.[136] With this the Court declared *Frye* inapplicable within the federal system and adopted a new standard for judging the admissibility of science in the courtroom.[137] The case was remanded for evaluation of the evidence in light of the new standard pronounced by the Court.[138]

Pennsylvania, of course, is not bound by the Federal Rules of Evidence, and in 1998 adopted a codified system covering the rules of evidence, with section 702 defining the rules of admissibility of any expert testimony.[139] Section 702 states that expert testimony is permitted provided that: (1) the subject at issue requires knowledge beyond that possessed by the general layperson; (2) the testimony will help the trier of fact to understand evidence or resolve a factual issue; and (3) the testimony is proffered by a witness with the requisite knowledge, skill, experience, training or education to

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Gives Federal Judges the Keys to the Gate of Admissibility of Expert Scientific Testimony, 39 S.D. L. REV. 141, 150 (1994).

131. Brief of Amicus Curiae The Pennsylvania Defense Institute in Support of Appellee at 22. *Blum* (No. 3711 Philadelphia 1995).

132. *Id.* at 23-24.

133. *See generally* Maliver, *supra* note 59.

134. *Daubert*, 509 U.S. at 579. *See supra* note 14 and accompanying text.

135. *Id.* at 585.

136. *Id.* at 590-91.

137. *Id.* at 597.

138. *Id.* at 597. Ultimately, the trial court excluded the evidence on the grounds that it was scientifically unreliable. *Id.* at 1322.

139. PA.R.E. 702.

qualify as an expert in the field.[140]

While it may appear as though the Pennsylvania Rules of Evidence also supercede *Frye*, the comments following section 702 declare that the adoption of a codified system of evidentiary rules did not alter Pennsylvania's adherence to the *Frye* standard.[141] In fact, the Pennsylvania Superior Court explicitly clarified this point in *Tagliati v. Nationwide Insurance Company* by confirmed that *Frye* continues to govern in Pennsylvania, and that the Pennsylvania Rules of Evidence are to be read in light of existing case law.[142] However, the problem is that Pennsylvania's application of *Frye* has allowed for inconsistencies in the case law, especially regarding whether conclusions, methodology, or both need the need to be generally accepted.[143]

Interpreting Pennsylvania's requirements for *Frye* has proved problematic, as demonstrated in the supreme court's opinion in *Blum*. The majority opinion seems to adhere to the proposition that both methodology and conclusions need to have general acceptance for an expert to testify,[144] but the court does not expressly state whether it is applying this approach in the case. On the contrary, the dissenting justices object to the proposition that an expert's conclusion must also conform to the *Frye* standard.[145] The confusion reflected in *Blum* points to the conclusion that this area of the law needs to be clarified by the supreme court. Indeed, other commentators have asked the court to reconcile the discrepancies and set forth the actual standard that should be employed.[146]

With recent advances in technology, it seems that science will continue to enter into the courtroom in an ever-increasing fashion. To effectively settle the issues raised regarding the value of an expert's opinion, a consistent, articulable standard needs to exist to which the courts can easily adhere. *Blum* may not have been a suitable case for assessing the need for a change in admissibility standards; however, *Blum* was certainly an adequate vehicle for the court to clearly enunciate what *Frye* requires. Given the

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140. *Id.*

141. *Id.*

142. 720 A.2d 1051 & n.4 (Pa. 1998).

143. Iheukwumere, *supra* note 104, at 108.

144. *See Blum II*, 764 A.2d at 4 n.5 (illuminating the criticism of Dr. Done's conclusions by other courts). *Id.*

145. *Id.* at 5, 9.

146. Iheukwumere, *supra* note 104, at 108.

importance of expert testimony, it is unfortunate that the Pennsylvania Supreme Court missed this opportunity to clarify the law in an area that requires its attention.

Kristie Kline